

CLAIMS

- 1 1. An integrated optic polarization converter comprising a plurality of core layers
- 2 used to approximate a gradually twisted waveguide and therein adiabatically
- 3 transform a propagating mode from an initial polarization state to a different final
- 4 polarization state.

- 1 2. The polarization converter of claim 1 wherein at least one of said core layers is
- 2 tapered linearly along the length of the polarization converter.

- 1 3. The polarization converter of claim 1 wherein at least one of said core layers is
- 2 tapered non-linearly along the length of the polarization converter.

- 1 4. The polarization converter of claim 1, wherein said plurality of core layers
- 2 comprises two core layers.

- 1 5. The polarization converter of claim 1, wherein said plurality of core layers
- 2 comprises three core layers.

- 1 6. The polarization converter of claim 1, wherein a certain number of said core
- 2 layers is maintained constant along the length of the polarization converter.

- 1 7. The polarization converter of claim 1, wherein said core layers are separated
- 2 laterally along the length of the polarization converter.

- 1 8. A method of using an integrated optic polarization converter, said method
- 2 comprising:
 - 3 receiving an initial polarization state; and
 - 4 forming a plurality of core layers to approximate a gradually twisted
 - 5 waveguide and therein adiabatically transform a propagating mode from said
 - 6 initial polarization state to a different final polarization state.

- 1 9. The method of claim 8 wherein at least one of said core layers is tapered linearly
- 2 along the length of the polarization converter.

- 1 10. The method of claim 8 wherein at least one of said core layers is tapered non-
- 2 linearly along the length of the polarization converter.

1 11. The method of claim 8, wherein said plurality of core layers comprises two
2 core layers.

1 12. The method of claim 8, wherein said plurality of core layers comprises three
2 core layers.

1 13. The method of claim 8, wherein a certain number of said core layers is
2 maintained constant along the length of the converter.

1 14. The method of claim 8, wherein said core layers are separated laterally along
2 the length of the polarization converter.